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STACKABLE CONTAINER WITH MOVABLE HANDLE ON EACH END

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ABSTRACT OF THE DISCLOSURE

A shipping container having movable handle means on the top and bottom thereof may be fabricated from semi-rigid plastic. In their rest positions the handle means are aligned with the top and bottom of the container body, respectively, thereby permitting the containers to be stacked upon one another. In their carrying position, the handles extend outwardly from the side wall structure, whereby the container may be grasped by the handle means at each end thereof and carried by one man, two men, or by industrial handling equipment.

The present invention relates to plastic containers and more particularly to an easily handled stackable plastic container.

Shippers and storers have long sought a container that would be suitable for use in packaging, storing, and shipping liquids, semiliquids, and dry materials, and that could be fabricated from plastic rather than conventional metals such as steel. A plastic container suitable for shipping and storage of such materials would be more economical than a similarly sized metal container by reason of the comparatively higher cost of conventionally utilized metals (e.g., steel) in relation to plastics (e.g., polyethylene). Moreover, problems of corrosion, which often arise with metal containers, could be avoided since plastics are generally more resistant than metals to corrosion and other similar forms of attack. Additionally, the effective substitution of plastic for metal in a commercial container could yield significant economics with respect to the weight of the resultant container.

The present invention comprises a shipping container fabricated from plastic and embodying a novel handle arrangement which permits the container to be manipulated with ease. Specifically, the novel and unique handle arrangement provided in connection with the containers of the present invention permits such containers to be carried by one man, by two men, or by industrial material handling equipment, such as a conventional hook and cradle arrangement.

In addition to the novel handle arrangement, the plastic containers of the present invention also are so designed that they may be disposed in vertical rows without pallets, dividers, or the like. Thus, in addition to ease of handling, containers of the present invention embody a stackability feature which greatly adds to their utility and convenience of use.

Briefly described, the container of the present invention comprises a molded plastic side wall structure, preferably of circular cross section, and plastic top wall and bottom wall members formed integrally therewith. An opening is provided in the top wall member and closure means are provided therefor. A pair of corresponding aligned handle means are movably mounted on the top and bottom members of the container adjacent the outer edges thereof. Each of the handle means is movable from a rest position to a carrying position, wherein it extends outwardly away from the side wall structure, whereby the container may be grasped by the handle means at each end thereof when the handle means are moved into their respective carrying positions.

A primary object of the present invention is to provide a plastic container having a new and unique handle arrangement adapted to facilitate the handling thereof.

Another object of the present invention is to provide a plastic container of the character described which exhibits a highly desirable stackability characteristic.

A still further object is to provide a new and easily handled plastic container that is inexpensive to manufacture, yet which is durable and extremely useful.

These and other objects, advantages, and features of the present invention will hereinafter appear and, for purposes of illustration, but not of limitation, an exemplary embodiment of the present invention is illustrated in the accompanying drawing, in which:

FIGURE 1 is a perspective view of an embodiment of the present invention;

FIGURE 2 is a fragmentary perspective view of the bottom end thereof;

FIGURE 3 is a plan view of the container shown in FIGURE 1;

FIGURE 4 is a fragmentary sectional view taken substantially along line 4—4 in FIGURE 3;

FIGURE 5 is a side perspective view showing the container handles in their respective carrying positions; and

FIGURE 6 is a fragmentary plan view showing one of the container handles in its carrying position.

Wtih reference to the drawing, FIGURE 1 shows a container **10** comprising a side wall structure **12** and a top member **14** and a bottom member **16** integrally formed therewith. Container **10** is preferably formed from a suitable semi-rigid plastic having strength sufficient to withstand the abuses to which a shipping container is subjected in normal use. Linear, high density polyethylene is an especially suitable plastic material, although other plastics of the polyolefin or petrochemical family may be employed. An especially preferred plastic is polyethylene having a density ranging between 0.941 and 0.965 grams per cubic centimeter (ASTM Test D–1505–60T) and a melt index ranging between 0.1 and 9.0 (ASTM Test D–1238–57T). Where the latter preferred polyethylene is employed in producing a blow-molded container, the melt index preferably ranges between 0.1 and 0.5, whereas when it is employed in producing an injection molded container, the melt index preferably lies between 4.0 and 9.0.

Top member **14** has a well **18** molded therein and an opening **20** defined by a flanged neck **22** is formed in well **18**. A conventional closure, such as a cap **24**, may be threaded on flanged neck **22** in order to close opening **20**. Of course, as will be obvious to one skilled in the art, substantially any form of conventional closure may be attached to neck **22**. In many instances, a pouring spout or other similar device may be attached to neck **22** in place of cap **24** in order to withdraw the contents from container **10**. The top of cap **24** is flush with the surface of tap **14** so that stackability of the container **10** is not impaired by the projection of the closure for opening **20** upwardly above the level of the top **14**.

A second well **26** is formed in top member **14** (see FIGURES 1, 3, and 4, especially). An integrally molded stud **28** is formed in well **26**. A pivotable handle **34** is provided with a yoke portion **32** which fits about stud **28**. A pivot pin **30** passes through yoke **32** and stud **28** whereby the handle **34** is pivotable with reference to the container **10**.

The thickness of handle **34** is such that, when it is disposed within well **26** (see FIGURE 1), the upper surface thereof is substantially aligned with the remainder of top member **14**. Thus, with the handle **34** disposed in well **26**, the stackability of the container is not impaired. A flanged vent opening **38** is formed within the opening **36** formed in handle **34** when the latter is disposed in its